

Notice of Allowability

Application No.

09/732,570

Examiner

Insun Kang

Applicant(s)

BOGGS ET AL.

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to 2/21/2006.
2. ☒ The allowed claim(s) is/are 52-58 and 84-96.
3. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some* c) ☐ None of the:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
- (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
- 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
- (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

- | | |
|---|--|
| 1. <input type="checkbox"/> Notice of References Cited (PTO-892) | 5. <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 2. <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 6. <input type="checkbox"/> Interview Summary (PTO-413),
Paper No./Mail Date _____. |
| 3. <input type="checkbox"/> Information Disclosure Statements (PTO-1449 or PTO/SB/08),
Paper No./Mail Date _____ | 7. <input checked="" type="checkbox"/> Examiner's Amendment/Comment |
| 4. <input type="checkbox"/> Examiner's Comment Regarding Requirement for Deposit
of Biological Material | 8. <input checked="" type="checkbox"/> Examiner's Statement of Reasons for Allowance |
| | 9. <input type="checkbox"/> Other _____ |

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EXAMINER'S AMENDMENT

1. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with Michael Haynes (Reg. 40,014) on 5/12/2006.

The application has been amended as follows:

52. (Currently Amended) A method comprising:

regarding an entire user control program stored in a first section of memory and executed by a programmable logic controller, while said entire user control program is executing and without significantly interfering with execution timing of said entire user control program, via a programmable logic controller operating system program:

displaying a section of said entire user control program indicated by a user to be debugged, said section having a beginning address of said section determined via a table of pointers to instructions of said entire user control program, said section of said entire user control comprising fewer instructions than said entire user control program;

compiling said section of said entire user control program to be debugged in a second section of memory;

without stopping execution of said entire user control program, automatically jumping to said second section of memory during real time execution of said entire user control program when an instruction indicated to be debugged is to be executed; and

capturing a status of said instruction as it is executed.

95. (Currently Amended) A machine-readable medium having stored thereon a plurality of executable instructions, the plurality of instructions comprising instructions for:

regarding an entire user control program stored in a first section of memory and executed by a programmable logic controller, while said entire user control program is executing and without significantly interfering with execution timing of said entire user control program, via a programmable logic controller operating system program:

displaying a section of said entire user control program indicated by a user to be debugged, said section having a beginning address of said section determined via a table of pointers to instructions of said entire user control program, said section comprising fewer instructions than said entire user control program;

compiling said section of said entire user control program to be debugged in a second section of memory;

without stopping execution of said entire user control program, automatically jumping to said second section of said memory during real time execution of said entire user control program when an instruction indicated to be debugged is to be executed; and

capturing a status of said instruction as it is executed.

96. (Currently Amended) A circuit embodying a plurality of executable instructions, the plurality of instructions comprising instructions for:

regarding an entire user control program stored in a first section of memory and executed by a programmable logic controller, while said entire user control program is executing and without significantly interfering with execution timing of said entire user control program, via a programmable logic controller operating system program:

displaying a section of said entire user control program indicated by a user to be debugged, said section having a beginning address of said section determined via a table of pointers to instructions of said entire user control program, said section comprising fewer instructions than said entire user control program;

compiling said section of said entire user control program to be debugged in a second section of memory;

without stopping execution of said entire user control program, automatically jumping to said second section of said memory during real time execution of said entire user control program when an instruction indicated to be debugged is to be executed; and

capturing a status of said instruction as it is executed.

These amendments were necessary in order to further clarify the claims.

Examiner's Statement of Reason(s) for Allowance

2. Claims 52-58 and 84-96 (renumbered as 1-20) are allowed.
3. The following is an examiner's statement of reasons for allowance:

The closest prior art of record, i.e. Logan, taken alone or in combination, fails to teach or fairly suggests at least: said section having a beginning address of said section determined via a table of pointers to instructions of said entire user control program, as recited in the independent claims 52, 95, and 96.

While Logan discloses displaying a continuous multi-block flowchart representing a program and the debugging unit providing for ease of debugging an original program during a run-time execution of the program, Logan does not disclose said section

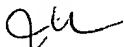
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having a beginning address of said section determined via a table of pointers to instructions of said entire user control program.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

4. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Insun Kang whose telephone number is 571-272-3724. The examiner can normally be reached on M-F 7:30-4 PM. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kakali Chaki can be reached on 571-272-3719. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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